

**WHAT IS CLAIMED IS:**

- 1 1. A method for facilitating multicasting of a file to a plurality of end users, comprising:  
2 multicasting control service information for reception by a plurality of end user  
3 download devices;  
4 receiving a plurality of requests for reception of offered content designated in said  
5 control service information, wherein said requests are received from a group of  
6 said end user download devices; and  
7 multicasting said offered content for reception by each one of said end user download  
8 devices in the group;  
9 wherein a multicast-capable distribution network facilitates multicasting of said  
10 control service information, facilitates receiving said requests for reception and  
11 facilitates multicasting said offered content.
- 1 2. The method of claim 1 wherein multicasting control service information includes:  
2 receiving said control service information initially transmitted from a centralized  
3 control apparatus;  
4 generating replicated versions of said control service information, wherein said  
5 replicated versions are generated by the multicast-capable distribution network;  
6 and  
7 forwarding said replicated versions of said control service information for reception  
8 by each one of the group of said end user download devices.
- 1 3. The method of claim 2 wherein receiving said control service information from the  
2 centralized control apparatus includes receiving an unsolicited advertisement of said  
3 control service information from the centralized control apparatus.
- 1 4. The method of claim 2, further comprising:  
2 configuring the multicast-capable distribution network to route said control service  
3 information by downstream apparatuses within the multi-cast capable network in  
4 response to receiving said control service information.

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- 1 5. The method of claim 4 wherein configuring the multicast-capable distribution network  
2 includes being statically configured for routing said control service information along pre-  
3 defined paths within the multi-cast capable distribution network.
- 1 6. The method of claim 4 wherein configuring the multicast-capable distribution network  
2 includes being configured for dynamically enabling access to said control service  
3 information by downstream apparatuses within the multi-cast capable network.
- 1 7. The method of claim 1 wherein receiving the plurality of requests for reception of a file  
2 designated in said control service information includes receiving said requests within a  
3 prescribed interval of time.
- 1 8. The method of claim 7 wherein the prescribed interval of time begins at a designated time  
2 and extends for a designated duration.
- 1 9. The method of claim 7 wherein receiving the plurality of requests for reception of a file  
2 designated in said control service information includes facilitating synchronization of the  
3 group of said end user download devices for enabling reception of said requests by the  
4 multicast-capable distribution network within the prescribed interval of time.
- 1 10. The method of claim 9 wherein facilitating synchronization of the group of said end user  
2 download devices includes  
3 synchronizing a clock of each one of said end user download devices with a reference  
4 time maintained by the multicast-capable distribution network; and  
5 synchronizing a clock of a multicast server apparatus with the reference time  
6 maintained by the multicast-capable distribution network.
- 1 11. The method of claim 1, further comprising:  
2 facilitating synchronization of the group of said end user download devices for  
3 enabling reception of said requests by the multicast-capable distribution network  
4 within a prescribed interval of time.

1 12. The method of claim 11 wherein:  
 2 receiving the plurality of requests for reception of a file designated in said control  
 3 service information includes receiving said requests within the prescribed interval  
 4 of time; and  
 5 the prescribed interval of time beginning at a designated time and extending for a  
 6 designated duration.

1 13. The method of claim 1 wherein:  
 2 the multicast-capable distribution network is an Internet Protocol (IP) based  
 3 distribution network; and  
 4 receiving the plurality of requests for reception includes receiving an Internet Group  
 5 Management Protocol IGMP membership report from each one of the group of  
 6 said end user download devices.

1 14. The method of claim 13, further comprising:  
 2 receiving said control service information from a centralized control apparatus in  
 3 response to receiving the IGMP membership report from each one of the group of  
 4 said end user download devices.

1 15. The method of claim 1 wherein multicasting said offered content includes:  
 2 receiving an initially transmitted copy of said offered content from a centralized  
 3 control apparatus;  
 4 generating replicated versions of said offered content, wherein said replicated versions  
 5 are generated by the multicast-capable distribution network; and  
 6 forwarding said replicated versions of said offered content for reception by each one  
 7 of the group of said end user download devices.

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1 16. A method for facilitating multicasting of a file to a plurality of end users, comprising:  
2 multicasting control service information for reception by a plurality of end user  
3 download devices, wherein multicasting said control service information includes  
4 receiving said control service information initially transmitted from a centralized  
5 control apparatus, generating replicated versions of said control service  
6 information by a multicast-capable distribution network and forwarding said  
7 replicated versions of said control service information for reception by each one of  
8 the group of said end user download devices;  
9 configuring the multicast-capable distribution network to route said control service  
10 information by downstream apparatuses within the multi-cast capable network in  
11 response to receiving said control service information;  
12 receiving a plurality of requests for reception of offered content designated in said  
13 control service information, wherein said requests are received from a group of  
14 said end user download devices, wherein said requests are received within a  
15 prescribed interval of time; and  
16 multicasting said offered content for reception by each one of said end user download  
17 devices in the group;  
18 wherein a multicast-capable distribution network facilitates multicasting of said  
19 control service information, facilitates receiving said requests for reception and  
20 facilitates multicasting said offered content.

1 17. The method of claim 16 wherein receiving said control service information from the  
2 centralized control apparatus includes receiving an unsolicited advertisement of said  
3 control service information from the centralized control apparatus.

1 18. The method of claim 16 wherein configuring the multicast-capable distribution network  
2 includes being statically configured for routing said control service information along pre-  
3 defined paths within the multi-cast capable distribution network.

1 19. The method of claim 16 wherein configuring the multicast-capable distribution network  
2 includes being configured for dynamically enabling access to said control service  
3 information by downstream apparatuses within the multi-cast capable network.

- 1 20. The method of claim 16 wherein the prescribed interval of time begins at a designated  
2 time and extends for a designated duration.
- 1 21. The method of claim 20 wherein receiving the plurality of requests for reception of a file  
2 designated in said control service information includes facilitating synchronization of the  
3 group of said end user download devices for enabling reception of said requests by the  
4 multicast-capable distribution network within the prescribed interval of time.
- 1 22. The method of claim 21 wherein facilitating synchronization of the group of said end user  
2 download devices includes:  
3 synchronizing a clock of each one of said end user download devices with a reference  
4 time maintained by the multicast-capable distribution network; and  
5 synchronizing a clock of a multicast server apparatus with the reference time  
6 maintained by the multicast-capable distribution network.
- 1 23. The method of claim 16, further comprising:  
2 facilitating synchronization of the group of said end user download devices for  
3 enabling reception of said requests by the multicast-capable distribution network  
4 within a prescribed interval of time.
- 1 24. The method of claim 23 wherein:  
2 receiving the plurality of requests for reception of a file designated in said control  
3 service information includes receiving said requests within the prescribed interval  
4 of time; and  
5 the prescribed interval of time beginning at a designated time and extending for a  
6 designated duration.
- 1 25. The method of claim 16 wherein multicasting said offered content includes:  
2 receiving an initially transmitted copy of said offered content from a centralized  
3 control apparatus;  
4 generating replicated versions of said offered content, wherein said replicated versions  
5 are generated by the multicast-capable distribution network; and

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6 forwarding said replicated versions of said offered content for reception by each one  
7 of the group of said end user download devices.

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1 26. A system for facilitating multicasting of a file to a plurality of end users, comprising:  
2 a multicast-capable distribution network;  
3 a centralized server coupled to the multicast-capable distribution network;  
4 a plurality of end use download devices coupled to the multicast-capable  
5 distribution network; and  
6 a data processor program;  
7 the data processor program being capable of enabling the multicast-capable  
8 distribution network to facilitate:  
9 multicasting control service information for reception by the plurality  
10 of end user download devices;  
11 receiving a plurality of requests for reception of offered content  
12 designated in said control service information, wherein said  
13 requests are received from a group of said end user download  
14 devices; and  
15 multicasting said offered content for reception by each one of said end  
16 user download devices in the group.

1 27. The system of claim 26 wherein enabling the multicast-capable distribution network to  
2 facilitate multicasting control service information includes enabling the multicast-capable  
3 distribution network to facilitate:  
4 receiving said control service information initially transmitted from a centralized  
5 control apparatus;  
6 generating replicated versions of said control service information, wherein said  
7 replicated versions are generated by the multicast-capable distribution network;  
8 and  
9 forwarding said replicated versions of said control service information for reception  
10 by each one of the group of said end user download devices.

1 28. The system of claim 27 wherein enabling the multicast-capable distribution network to  
2 facilitate receiving said control service information from the centralized control apparatus  
3 includes enabling the multicast-capable distribution network to facilitate receiving an

4 unsolicited advertisement of said control service information from the centralized control  
5 apparatus.

1 29. The system of claim 27 wherein the data processor program is further capable of enabling  
2 the multicast-capable distribution network to facilitate:  
3 configuring the multicast-capable distribution network to route said control service  
4 information by downstream apparatuses within the multi-cast capable network in  
5 response to receiving said control service information.

1 30. The system of claim 29 wherein the multicast-capable distribution network is statically  
2 configured for routing said control service information along pre-defined paths within the  
3 multi-cast capable distribution network.

1 31. The system of claim 29 wherein the multicast-capable distribution network is configured  
2 for dynamically enabling access to said control service information by downstream  
3 apparatuses within the multi-cast capable network.

1 32. The system of claim 26 wherein enabling the multicast-capable distribution network to  
2 facilitate receiving the plurality of requests for reception of a file designated in said  
3 control service information includes enabling the multicast-capable distribution network  
4 to facilitate receiving said requests within a prescribed interval of time.

1 33. The system of claim 32 wherein the prescribed interval of time begins at a designated  
2 time and extends for a designated duration.

1 34. The system of claim 32 wherein enabling the multicast-capable distribution network to  
2 facilitate receiving the plurality of requests for reception of a file designated in said  
3 control service information includes enabling the multicast-capable distribution network  
4 to facilitate synchronization of the group of said end user download devices for enabling  
5 reception of said requests by the multicast-capable distribution network within the  
6 prescribed interval of time.



1 35. The system of claim 34 wherein enabling the multicast-capable distribution network to  
2 facilitate synchronization of the group of said end user download devices includes  
3 enabling the multicast-capable distribution network to facilitate:  
4 synchronizing a clock of each one of said end user download devices with a reference  
5 time maintained by the multicast-capable distribution network; and  
6 synchronizing a clock of a multicast server apparatus with the reference time  
7 maintained by the multicast-capable distribution network.

1 36. The system of claim 26 wherein the data processor program is further capable of enabling  
2 the distribution network to facilitate:  
3 synchronization of the group of said end user download devices for enabling reception  
4 of said requests by the multicast-capable distribution network within a prescribed  
5 interval of time.

1 37. The system of claim 36 wherein:  
2 enabling the multicast-capable distribution network to facilitate receiving the plurality  
3 of requests for reception of a file designated in said control service information  
4 includes enabling the multicast-capable distribution network to facilitate receiving  
5 said requests within the prescribed interval of time; and  
6 the prescribed interval of time beginning at a designated time and extending for a  
7 designated duration.

1 38. The system of claim 26 wherein:  
2 the multicast-capable distribution network is an Internet Protocol (IP) based  
3 distribution network; and  
4 enabling the multicast-capable distribution network to facilitate receiving the plurality  
5 of requests for reception includes enabling the multicast-capable distribution  
6 network to facilitate receiving an Internet Group Management Protocol IGMP  
7 membership report from each one of the group of said end user download devices.

1 39. The system of claim 38 wherein the data processor program is further capable of enabling  
2 the multicast-capable distribution network to facilitate:  
3 receiving said control service information from a centralized control apparatus in  
4 response to receiving the IGMP membership report from each one of the group of  
5 said end user download devices.

1 40. The system of claim 26 wherein enabling the multicast-capable distribution network to  
2 facilitate multicasting said offered content includes enabling the multicast-capable  
3 distribution network to facilitate:  
4 receiving an initially transmitted copy of said offered content from a centralized  
5 control apparatus;  
6 generating replicated versions of said offered content, wherein said replicated versions  
7 are generated by the multicast-capable distribution network; and  
8 forwarding said replicated versions of said offered content for reception by each one  
9 of the group of said end user download devices.

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1 41. A data processor program product for facilitating multicasting of a file to a plurality of  
 2 end users, comprising:  
 3 a data processor program processable by a data processor of a multicast-capable  
 4 distribution network;  
 5 an apparatus from which the data processor program is accessible by the data  
 6 processor; and  
 7 the data processor program being capable of enabling the data processor to  
 8 facilitate  
 9 multicasting control service information for reception by a plurality of  
 10 end user download devices;  
 11 receiving a plurality of requests for reception of offered content  
 12 designated in said control service information, wherein said  
 13 requests are received from a group of said end user download  
 14 devices; and  
 15 multicasting said offered content for reception by each one of said end  
 16 user download devices in the group.

1 42. The data processor program product of claim 41 wherein enabling the data processor to  
 2 facilitate multicasting control service information includes enabling the data processor to  
 3 facilitate:  
 4 receiving said control service information initially transmitted from a centralized  
 5 control apparatus;  
 6 generating replicated versions of said control service information, wherein said  
 7 replicated versions are generated by the multicast-capable distribution network;  
 8 and  
 9 forwarding said replicated versions of said control service information for reception  
 10 by each one of the group of said end user download devices.

1 43. The data processor program product of claim 42 wherein enabling the data processor to  
 2 facilitate receiving said control service information from the centralized control apparatus  
 3 includes enabling the data processor to facilitate receiving an unsolicited advertisement of  
 4 said control service information from the centralized control apparatus.

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1 44. The data processor program product of claim 42 wherein the data processor program is  
2 further capable of enabling the data processor to facilitate:  
3 configuring the multicast-capable distribution network to route said control service  
4 information by downstream apparatuses within the multi-cast capable network in  
5 response to receiving said control service information.

1 45. The data processor program product of claim 44 wherein enabling the data processor to  
2 facilitate configuring the multicast-capable distribution network includes enabling the  
3 data processor to facilitate statically configuring the multicast-capable distribution  
4 network for routing said control service information along pre-defined paths within the  
5 multi-cast capable distribution network.

1 46. The data processor program product of claim 44 wherein enabling the data processor to  
2 facilitate configuring the multicast-capable distribution network includes enabling the  
3 data processor to facilitate dynamically enabling the multicast-capable distribution  
4 network for accessing said control service information by downstream apparatuses within  
5 the multi-cast capable network.

1 47. The data processor program product of claim 41 wherein enabling the data processor to  
2 facilitate receiving the plurality of requests for reception of a file designated in said  
3 control service information includes enabling the data processor to facilitate receiving  
4 said requests within a prescribed interval of time.

1 48. The data processor program product of claim 47 wherein the prescribed interval of time  
2 begins at a designated time and extends for a designated duration.

1 49. The data processor program product of claim 47 wherein enabling the data processor to  
2 facilitate receiving the plurality of requests for reception of a file designated in said  
3 control service information includes enabling the data processor to facilitate  
4 synchronization of the group of said end user download devices for enabling reception of  
5 said requests by the multicast-capable distribution network within the prescribed interval  
6 of time.

1 50. The data processor program product of claim 49 wherein enabling the data processor to  
 2 facilitate synchronization of the group of said end user download devices includes  
 3 enabling the data processor to facilitate:  
 4 synchronizing a clock of each one of said end user download devices with a reference  
 5 time maintained by the multicast-capable distribution network; and  
 6 synchronizing a clock of a multicast server apparatus with the reference time  
 7 maintained by the multicast-capable distribution network.

1 51. The data processor program product of claim 41 wherein the data processor program is  
 2 further capable of enabling the distribution network to facilitate:  
 3 synchronization of the group of said end user download devices for enabling reception  
 4 of said requests by the multicast-capable distribution network within a prescribed  
 5 interval of time.

1 52. The data processor program product of claim 51 wherein:  
 2 enabling the data processor to facilitate receiving the plurality of requests for  
 3 reception of a file designated in said control service information includes enabling  
 4 the data processor to facilitate receiving said requests within the prescribed  
 5 interval of time; and  
 6 the prescribed interval of time beginning at a designated time and extending for a  
 7 designated duration.

1 53. The data processor program product of claim 41 wherein:  
 2 the multicast-capable distribution network is an Internet Protocol (IP) based  
 3 distribution network; and  
 4 enabling the data processor to facilitate receiving the plurality of requests for  
 5 reception includes enabling the data processor to facilitate receiving an Internet  
 6 Group Management Protocol IGMP membership report from each one of the  
 7 group of said end user download devices.

1 54. The data processor program product of claim 53 wherein the data processor program is  
 2 further capable of enabling the data processor to facilitate:

3 receiving said control service information from a centralized control apparatus in  
4 response to receiving the IGMP membership report from each one of the group of  
5 said end user download devices.

1 55. The data processor program product of claim 41 wherein enabling the data processor to  
2 facilitate multicasting said offered content includes enabling the data processor to  
3 facilitate:  
4 receiving an initially transmitted copy of said offered content from a centralized  
5 control apparatus;  
6 generating replicated versions of said offered content, wherein said replicated versions  
7 are generated by the multicast-capable distribution network; and  
8 forwarding said replicated versions of said offered content for reception by each one  
9 of the group of said end user download devices.

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